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# WEBSITE DEVELOPMENT USING MODERN DESIGN FEATURES AND FUTURE WEB- TRENDS



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## BACHELOR'S THESIS | ABSTRACT

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The aim of this thesis was to plan and develop a new website for Cloudit Solutions using new design features and future web-trends. Cloudit Solutions offer digital marketing options to its customers and is mainly involved in website design and its development. They felt that their old website was no longer able to create a better impression on their clients; hence there was a need for a new modern website.

The research of the thesis was carried out to gather data on modern web features and possible future options. The website needed to create a better end user experience as well as give a modern and professional look to the website at the same time. The research was carried out based on those factors and a new website was implemented.

The thesis was focused on developing a responsive website which allowed the single website to be viewed on different web devices and could adjust to the different screen sizes using HTML5 and CSS3. The thesis also focused on giving a fresh marketing look to the website through minimalist web design using better typography, grids, spacing and color. Surveys and research data in the thesis suggests that customers are more likely to buy products if the website is accessible on the go and it is browsed easily; hence making responsive web design and minimal web design is a very essential element to have for marketing.

## KEYWORDS

web development, web-trends, responsive web design, minimalist web design

# FOREWORD

First of all, I would like to thank Cloudit Solutions for providing me with the opportunity to work on a project to develop their website as a part of my thesis. I have learnt a lot during the process and I am very grateful about it. I would also like thank my colleagues from Cloudit Solutions who have supported me during the process of developing the website.

Ishan Raj Regmi

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## **ACRONYMS, ABBREVIATIONS AND SYMBOLS**

WWW	World Wide Web
HTML	Hyper Text Markup Language
CSS	Cascading style sheets
GPL	General Public License

# 1 INTRODUCTION

The internet is arguably the most used word in the world at the moment. It has become the main source of information and communication. People use internet for anything and everything on their everyday life. This makes internet a viable source of marketing the company's brand. Website is a collection of webpages on the WWW and is the simple way of accessing information in the internet.

The main idea of making a website is to market the brand of the company. This thesis was carried out for Cloudit solutions, a digital marketing co-op, and the assignment was to design a modern website for them. The challenge for making a modern and trendy website for Cloudit solutions is a difficult task as it is a web development firm itself. The website reflects their work as a web development firm and works as an important marketing tool for their clients.

There was a great need to replace the old website as it did not really impress any customers. Moreover, the user experience as a visitor was not so great and as quoted by the employees, the website looks slightly outdated. The new website needed to be entertaining, relevant and useful. It needed to make an impact in the customers and the visitors of the website. The content of the website did not need to be changed that much as it already contains the information that Cloudit solutions wants to provide. The main change needed was in the design and using new web development trends was a must.

In order to achieve the objective of this thesis of designing a new website for Cloudit solutions, the work was divided into different parts and was carried out as follows:

1. Reviewing the old website and acknowledging where the changes needed to be implemented.
2. Doing research on how to make the website modern and appealing which included
  - a) gaining advices from Hasan and partners, one of the leading advertising agency in Finland and

- b) Carrying out research on developing the website to provide an optimal viewing experience across wide range of devices.
- 3. Creating a basic sketch on the basis of the above research.
- 4. Implementing the above ideas into developing the new website.
- 5. Reviewing the website design to Cludit solutions and analyzing the response.
- 6. Discussing the ideas used in the website and the ideas that had been dropped.

After the initial research, a website responsive to different devices in the market was considered as a vital part in development of the website. This thesis explains the need for a thoroughly responsive and minimalist website. This thesis comprises of the following chapters: .

- 1. Introduction – This contains background of the thesis.
- 2. Research and analysis – It introduces research on web trends.
- 3. Implementation – It describes the development of the website.
- 4. Conclusion



## 2 RESEARCH AND ANALYSIS

### 2.1 Analyzing the previous website

Before developing the new website it was necessary to analyze the existing website and understand the changes needed. This website was made in 2011 and it still looks quite modern.



Figure 1. Old website

The view of the whole website is only one page. There is small information about the company in the box located in the center and video next to it. What the company does is written in the bottom. When the portfolio link is clicked on the navigation bar, the box located in the center changes its content from description of the company to its portfolio. It is possible to click and view different projects the company has undertaken. The following are the strengths and weaknesses of this website to effectively understand what changes need to be in the new website.

### **Strengths**

- ✧ The website contains only some modern features such as Javascript/JQuery animations and embedded videos.
- ✧ It includes most of the content that needed to be shown.
- ✧ It has good structure.
- ✧ It has easy navigation (since everything is in the homepage).

### **Weaknesses**

- ✧ The website is not viewable properly across different range of devices/screens
- ✧ It has very congested content in the homepage
- ✧ There are lots of unnecessary pictures and colors
- ✧ It was not giving a great end user browsing experience
- ✧ It was not attractive to the viewer

## **2.2 Visit to Hasan and partners**

After analyzing the old website, it was necessary to determine the new changes that needed to be done with the website. In order to get ideas for changes marketing wise, advice were taken from Hasan and Partners which is one of the leading advertising

agency in Finland. This was done during a company visit to Hasan and Partners by Cludit solutions.

Following the visit, Hasan and Partners gave vital advice about how to make company's brand visible to the public. This has led to the basic idea of design of the website. The following information was gathered during the visit.

- ⤴ To successfully market the company's webpage, it needs to have some personality, meaning, it needs to be entertaining, relevant and useful.
- ⤴ The website needs to take care of its audience, and dialog is the key for that. People always read, but it doesn't mean that the content has got their attention. Being able to design the website and write contents in such a manner that an impact is made in order to get their attention is very important.
- ⤴ Moreover, in order to make that impact, stunts needs to be made. Stunts in these terms means to do something out of the ordinary or putting high emphasis on something to seek the attention of the audience.
- ⤴ Everything starts with an idea and doing something out of the ordinary will attract attention and company needs to be brave enough to do that.

After the ideas acquired from the visit, the next research was on future web trends and to make the website modern.

### 2.3 Research on modern web-trends

In order to start designing the website, the new modern web design trends were needed to be known. Along with ideas from Hasan and Partners, research through internet magazines and books was carried out. After going through internet technology news column and blogs Mashable ([www.mashable.com](http://www.mashable.com)), Cnet ([www.cnet.com](http://www.cnet.com)), WDL (webdesignledger.com), Web designer wall (webdesignerwall.com), Wired ([www.wired.com](http://www.wired.com)) and Emarketer (www.emarketer.com), the following points were gathered as main points regarding future web trends.

- ⤴ Mobile ready version/ touch screen version
- ⤴ Responsive Web design
- ⤴ Emphasis on typography/ Minimalist design
- ⤴ Fixed headers
- ⤴ Large photo backgrounds
- ⤴ CSS animation/transparency
- ⤴ Vertical Scrolling or parallax scrolling or infinite scrolling
- ⤴ Slideshow design
- ⤴ Single page web design
- ⤴ Sliding web panels

Some web trends are still considered something for the far future. One of them is parallax scrolling where different web contents slide over each other to provide better presentation of title and content. This is however heavy on mobile devices and its implementation is still in development phase. CSS animation is another one of those trends, although it promises to be very fascinating trend in the future, javascript animations are still considered easy to use. Most experts think that responsive web design and minimal web design are the most important trends.

## 2.4 Responsive Web design

Responsive web design is a design where single set of codes for a website will run smoothly and perfectly on all environments. Nowadays, people are using different devices available in the market. Everyone has a smart phone or a tablet, not just a desktop size screen. So for having a web for the go, responsive web design is very important to have for a company.

### 2.4.1 Importance of responsive web design

*"The global **smartphone** audience surpassed the 1 billion mark in 2012 and will total 1.75 billion in 2014. eMarketer expects smartphone adoption to continue on a fast-paced trajectory through 2017,"*

*-eMarketer*

Figure 2. Global smartphone audience (eMarketer, 2013)

Due to rise of cheap smartphones and availability of 3G and 4G networks, according to eMarketer the number of smartphone users is supposed to reach around 1.75 billion users in 2014. Whereas in the developing countries even though not all people have access to smartphones, internet through mobile phones is still being used. According to eMarketer, the number of mobile phone users is already up to 4.5 billion users. In this report by market research firm eMarketer, with cheaper smartphones available, it expects the growing market in emerging countries to boost the market.

In 2012 around 58.2% of the global population was using mobile phones; this percentage grew to 61.1% in 2013 and is further expected to grow to 63.5% of the global population. By 2017 around 69.4% of world's population is expected to use mobile phones.

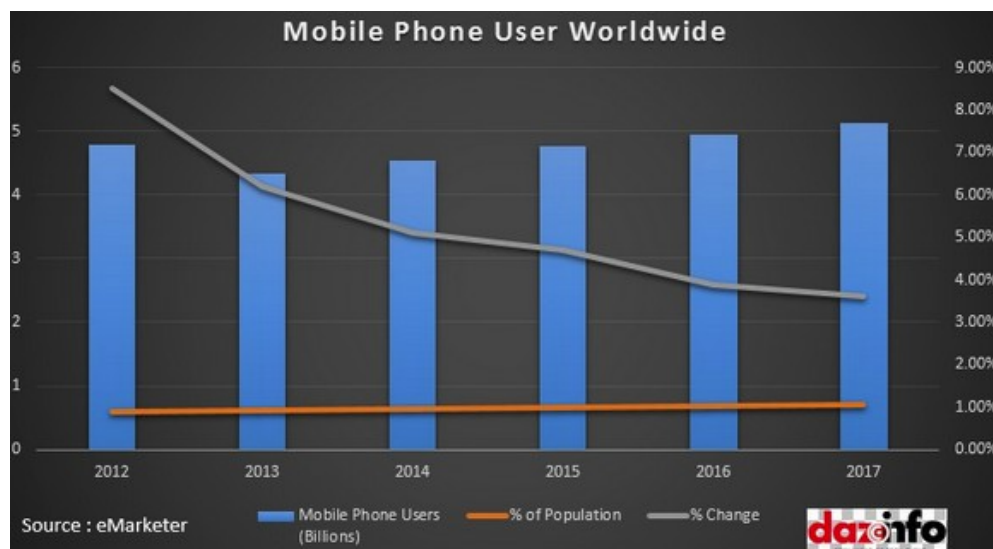


Figure 3. Mobile phone user worldwide (dazinfo.com,2013)

More and more smartphones are coming into the market and the prices are getting cheaper and cheaper. There is a rising trend of low cost smartphones now-a-days. They are not only cheap they come along with dual core processors and contain multiple gigabytes of RAM. These aspects are fueling the increase in sales of these smartphones. With this increase of smartphones sales we are moving in a direction where people are trying to access everything from their phones. Hence, companies with websites which are available for mobile devices have a marketing boost.

Among the mobile phone users, the percentage of smartphone users is expected to increase drastically. There were around 1.13 billion smartphone users in 2012 i.e. around 28% of global Smartphone users. The number of smartphone users increased by 27.1% in 2013 to 1.43 billion users which is around 33% of global smartphone users. The world smartphone market sales grew to 250 million in Q3, 2013. Number of smartphone users is further expected to increase by 22.5% to 1.75 billion users in 2014, which is around 39% of mobile users. Around 49% i.e. nearly half of the mobile phone users globally are likely to use smartphone by 2017.

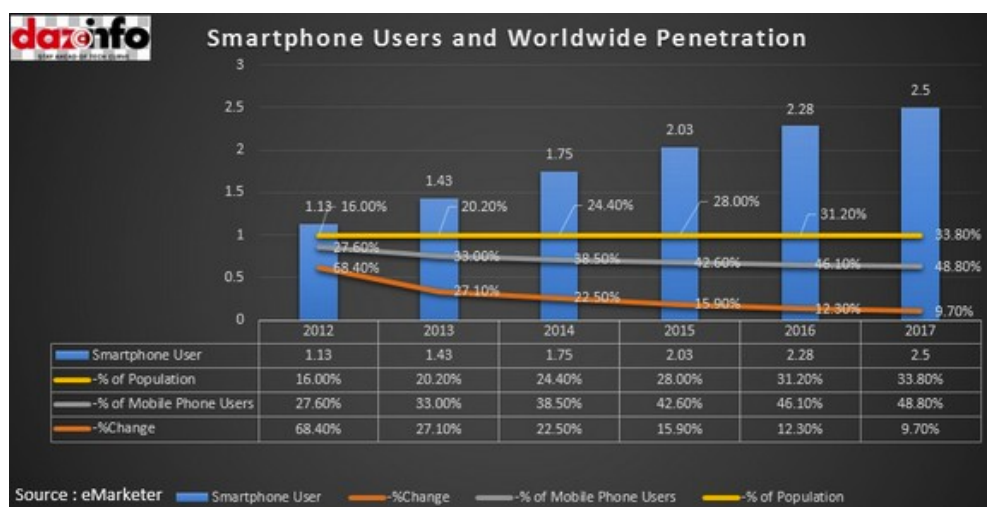


Figure 4. Smartphone users and worldwide penetration. (Dazinfo, 2013)

The main factor on why a company needs responsive web design is shown by the data on how much internet is being accessed on the go. According to emarketer the mobile internet usage is increasing rapidly and is expected to continue to increase at the same pace.

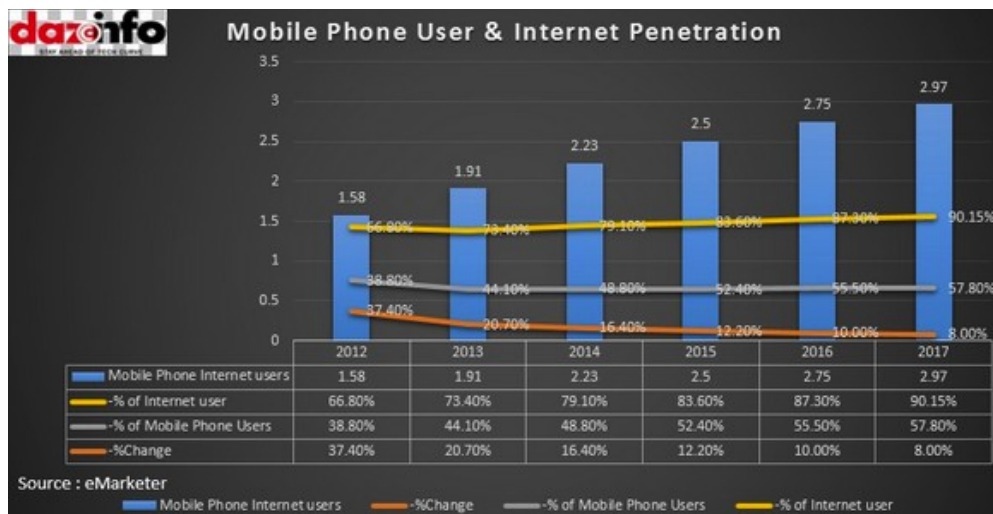


Figure 5. Mobile phone user and internet penetration (Dazinfo, 2013)

In 2012 around 1.58 billion users used their mobile phones for internet, which is around 67% of internet users. The number of users using mobile phones for internet grew by 21% to 1.91 billion users, which is around 74% of internet users. This number is further expected to increase by 17% in 2014 to 2.23 billion users, which is around 79% of total internet users. By 2017 around 2.97 billion users are expected to use the internet over their phones, which is around 91% of total internet users and 58% of mobile phone users. In the near future, the Smartphone would become our primary way of connecting to the internet and Smartphone users would access major applications and data from their mobile devices.

#### 2.4.2 Implementation of responsive web design

Responsive web design can be implemented easily if three simple steps mentioned below are implemented. The key to implementing responsive web design lies in making HTML structure which is able to be fluid and the use of CSS3 media query.

### *Step 1: Use of Meta tag*

Most of browsers used in mobile devices scale HTML pages to a wide viewport width in order for it to fit on the screen. The viewport meta tag is used to reset this.

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

Figure 6. Meta tag

This viewport tag in *Figure 6* instructs the browser to use the device width as the viewport width and also instructs to disable the initial scale. This Meta tag should be included in the <head> tag in the html file of the site.

### *Step 2: Use of a fluid HTML structure*

It is important to plan a fluid HTML structure before developing the website and plan how it is going to react when viewed in a different screen. For example a basic layout is shown in *Figure 5* with a header, content, sidebar and footer. This structure will be used in the next step while explaining the media queries. The header has a fixed 200px height, container is 600px wide and sidebar is 300px.



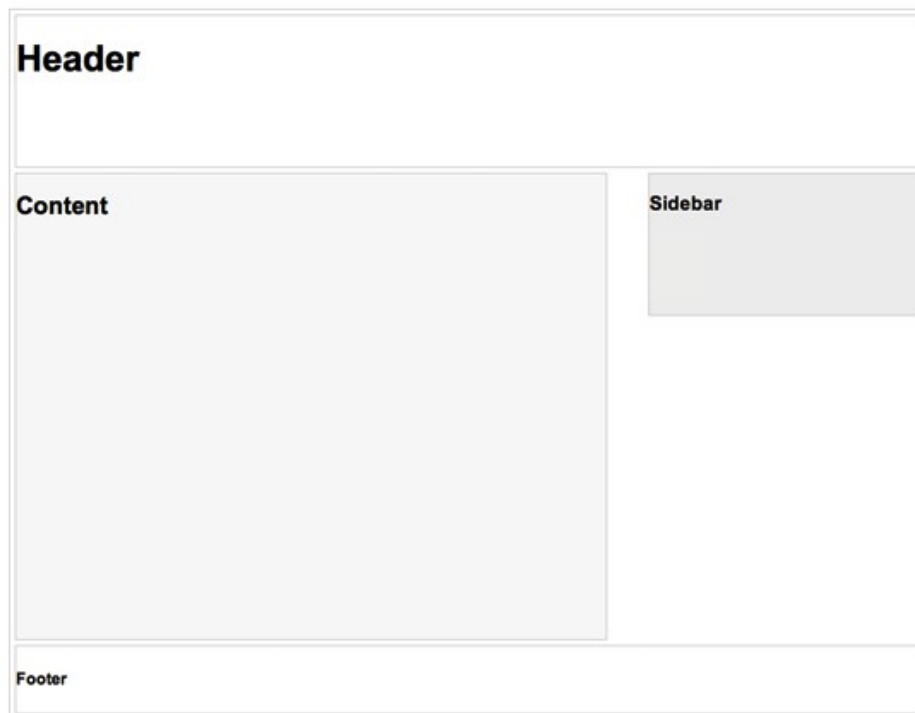


Figure 7. HTML structure

### *Step 3. Use of media queries*

The use of CSS3 media queries is essential in order to implement responsiveness in the website. The idea of CSS3 media queries is to write guidelines for the browser on how to render the page for different viewport width.

Taking the earlier example (*Figure 5*), the media queries for different viewport width is written in Figure 6 below. The first figure is for the rules to be in effect if the viewport width is 980px or less. In order for the containers to become fluid, the value of container width should be in percentage instead of pixels.

```
/* for 980px or less */
```

```
@media screen and (max-width: 980px)
{
    #pagewrap {
        width: 94%;
    }

    #content {
        width: 65%;
    }

    #sidebar {
        width: 30%;
    }
}
```

Figure 8. Media Query I

With the above codes, when the viewport width is lowered, the contents become automatically adjusted with the space it has and becomes fluid. The content width will always be 65% whereas the sidebar width will be 30% of the page wrap. The problem arises when the viewport width is further lowered. Then, it becomes difficult to read. To avoid this problem, the next set of media queries are introduced.

```
/* for 700px or less */
```

```
@media screen and (max-width: 700px)
```

```
{
```

```
    #content {  
        width: auto;  
        float: none;  
    }
```

```
    #sidebar {  
        width: auto;  
        float: none;  
    }
```

```
}
```

Figure 9. Media Query II

This set of codes listed above restores the content to its normal width but now the contents are vertically placed to each other. This is result of the float being set to “none”. This allows the user to scroll vertically through the contents that are in normal width and size. When the viewport is further reduced, the next set of media queries are introduced. This time let’s take an example of the viewport width that is used in mobile phones (480px or less).

```
/* for 480px or less */  
  
@media screen and (max-width: 480px)  
{  
  
    #header {  
        height:auto;  
    }  
  
    #sidebar {  
        display:none;  
    }  
}
```

Figure 10. Media Query III

In these set of codes, the height of the header is set back to auto so it is properly visible on the mobile devices. The codes used in the 700px viewport to make the contents in vertical scrolling pattern are inherited. This will make the contents more easily readable in smaller screens and also allow the user to scroll though the contents easily. The sidebar is hidden in this viewport. Although it can be generated as a pop up menu when clicked as a button using simple javascript. This will allow the user to see only the required content in the screen.

#### *Step 4: Flexible images*

The images in the website also need to be flexible. The relative solution to make it flexible is by setting the max-width of the image 100%. This will make the picture use the full space possible.

```
img {  
    max-width: 100%;  
    height: auto;  
}
```

Figure 11. Flexible Images

CSS3 media queries are an important and easy way to make the website responsive. The steps shown above are a simple example of making a responsive website. However, there are lists of media query features that can be used to make even complex websites responsive. The following are the features of media queries that can be used if needed.

FEATURE NAME	DEFINITION	HAS min- AND max- PREFIXES
width	The width of the display area.	✓
height	The height of the display area.	✓
device-width	The width of the device's rendering surface.	✓
device-height	The height of the device's rendering surface.	✓
orientation	Accepts portrait or landscape values.	✗
aspect-ratio	Ratio of the display area's width over its height. For example: on a desktop, you'd be able to query if the browser window is at a 16:9 aspect ratio.	✓
device-aspect-ratio	Ratio of the device's rendering surface width over its height. For example: on a desktop, you'd be able to query if the screen is at a 16:9 aspect ratio.	✓
color	The number of bits per color component of the device. For example, an 8-bit color device would successfully pass a query of (color: 8). Non-color devices should return a value of 0.	✓
color-index	The number of entries in the color lookup table of the output device. For example, @media screen and (min-color-index: 256).	✓

Figure 12. Media Query Features

## 2.5 Importance of mobile website for a company

According to Google, 67% of the people are likely to buy product if the company have a mobile friendly website.

“In this world of constant connectivity, consumers expect to find the information that they want, when they want it - especially when they're on the go. We know that this applies to their web browsing experiences on mobile, so we took a deeper look at users' expectations and reactions towards their site experiences on mobile. Most interestingly, 61% of people said that they'd quickly move onto another site if they didn't find what they were looking for right away on a mobile site. The bottom line: Without a mobile-friendly site you'll be driving users to your competition. In fact, 67% of users are more likely to buy from a mobile-friendly site, so if that site's not yours, you'll be missing out in a big way.” - Quoted by Masha Fisch, Google Mobile Ads Marketing

A study from Google, who surveyed 1,088 US adult smartphone internet users in 2012 reported.

- ✧ 75% of users prefer a mobile-friendly site, 96% of consumers say they have encountered sites that are clearly not designed for mobile devices.
- ✧ When they visited a mobile-friendly site, 74% of people say they are more likely to return to that site in the future
- ✧ 67% of mobile users say that when they visit a mobile-friendly site, they are more likely to buy a site's product or service
- ✧ 61% of users said that if they didn't find what they were looking for right away on a mobile site, they would quickly move on to another site
- ✧ 79% of people who do not like what they find on one site will go back and search for another site
- ✧ 50% of people said that even if they like a business, they will use them less often if the website is not mobile-friendly
- ✧ 48% of users say they feel frustrated and annoyed when they get to a site that is not mobile-friendly
- ✧ 36% said they felt like they have wasted their time by visiting those sites

- ⤴ 52% of users said that a bad mobile experience made them less likely to engage with a company
- ⤴ 48% said that if a site did not work well on their smartphones, it made them feel like the company did not care about their business

With these facts from the survey conveyed by google, it is safe to say that if the company does not have a mobile website, it is destined to loose its customers and/or potential customers. That is why having a mobile-friendly website is very important for a company.



Figure 13. Need for mobile website.

## 2.6 Minimalist web design

Minimalism probably means different things to different people but is the most important design style to master. First of all, it important to understand what minimalism means. It means stripping a piece of work down to its most fundamental features and achieving the desired result by using the fewest essentials or elements to maximum effect.



Minimalism aims for simplicity by reducing work to the fundamental and the essential, and by stripping away the flashy layers that might be placed on top of it. Minimalist designs tend towards better typography proper grid layouts. Minimalism all about less is more and doing more with less. In website development minimalism is about designing smarter.

While creating minimalist design the following things are very important to get solid grasp of:

- *Grid system*

If the website is to be well designed, the use of a grid is a must. Its a common misconception to think that the grid system restricts designers from using their freedom to create a design that is unique. The reality is actually the opposite. It is also a very important element in responsive web design because grids can play an important factor while developing websites for different screens. In simple terms, a grid system is a structure comprising of horizontal and vertical lines which intersect with each other and contents are arranged over them. This grid system provides a system that designers work to structure and present the content. It easier to manage content with grids in order to make it easily readable to the user. Managing contents and presenting it in a proper structure makes the website consciously or sub-consciously look professional to the end users.

Grid systems have been used for a long time in print publications, but now they are introduced into web designing. Hence, many CSS grid frameworks have been made available. For example, a very popular 960 grid system is a very popular grid system recommended for designing websites. These CSS grid frameworks are now being used almost as standard while designing websites.

The grid system is one way to achieve a level of consistency in the designs which otherwise would be extremely difficult to master in the website. Moreover, uniformity and consistency are very important in order to create a website that the users will find easy to navigate, read, and understand. To make the website looking more professional, a good user experience needs to be created. To create better end user experience of the website, the user needs to build a sense of familiarity with it. The grid system helps with that because it provides a solid base to your design. The base or the skeleton can be used in all the pages to create a familiar look. Although the grid system

is something that is invisible to the final user, it is very important in creating layout for the designs. Its also important to understand that it is not a strict rule to necessarily follow all the time and be limited to it. Although it is important to understand the grid systems before you break the rules and follow your own demand.

There are many advantages to using grids while developing a website. Grid are helpful not only while first designing the website but also during the building and development stages. They are also very useful for future management and expansion of the website if needed . Another advantage of grid systems is that it allows the designer to design in proportions, which will create a balance between the different elements that are in the design. A grid system that the designer plans to use should be very flexible so that it is possible to be customized to the needs. This is very important especially while designing a responsive website.

The use of a grid system in the web-design allows the sense of uniformity and familiarity in it. There are some sites that have vastly different page designs but now-a-days for many this is not the case. Since there are more and more screens in the market, it is imperative to have a uniform and more structured feel to the layout. This is also very useful during coding the design, because grids make coding much easier as well. This is because of the fact that it is possible to pick out the uniform elements in the design and apply this modular effect to the code and CSS structure.

Below is a small skeleton example of how grid can be used to make a structural website.

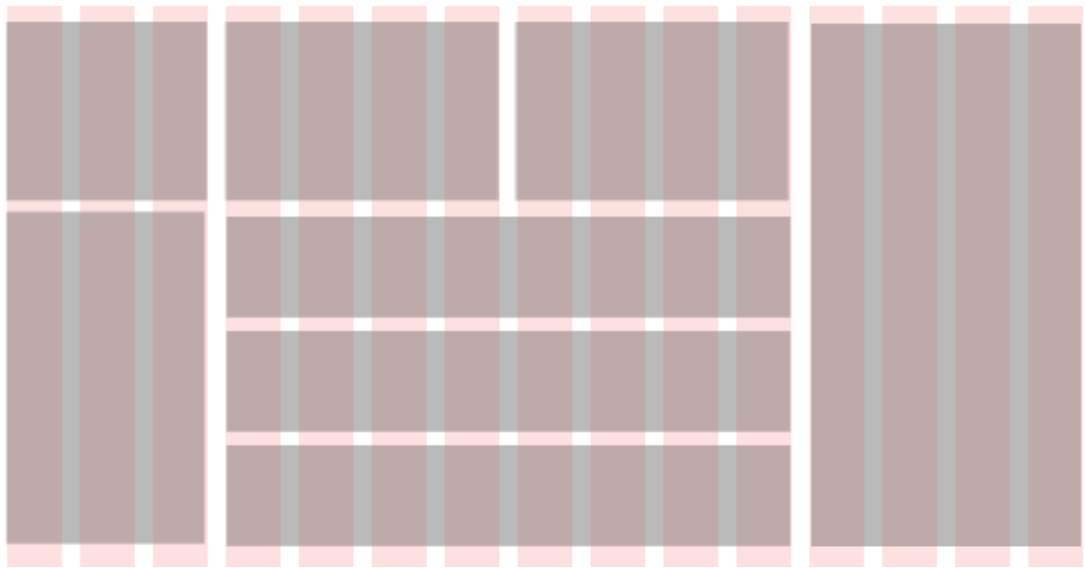


Figure 14. Grid Layout

#### - *Typography*

Typography is one of important factors to be considered during web design because most websites are almost 95% typography. So the main question is how to arrange the type to attract the final user as well as make it easily readable for them. What makes the content on one website very easily readable but hard to read on another site? Is it just due to the fact of the font size or is there something more to it? To have answers to these questions, it is necessary to understand text types first. There are two categories of type, text type and display type. Text type is designed to be readable across different sizes and display type is designed to pull the reader to the text using more elaborative and stylish look.

It necessary to use the text type and display type according to the needs of the website and where the emphasis is required. The display type will attract the user to read and the text type will contain the actual text which needs to be read. For the display type, it is not strictly necessary for the text to be readable or legible. It simply needs to attract the user to the actual text but the text needs to be both readable and legible.

So, how can we make the text more readable? The use of grids, whitespace and images (or just layout in simple terms) has an impact on readability. There are other factors, as well. Alignment, paragraph, measure, leading, kerning, font style and weight, color, contrast as well as the number of different fonts all effect readability. And all these factors and can be determined by the CSS.

Typography is very important in minimal design. Because of its simplicity in the minimal design, typography plays a more important role than in other website designs.

### - *Space*

Space can be used to separate and/or connect elements during the designing of the website. Wider spaces are used to separate elements whereas narrower spaces connect elements to show the relationship between these elements. Moreover, the elements can also be overlapped in order to maximize their relationship. To create rhythm, direction, and sometimes even motion, it is necessary to control and shape the space in the design. The flow of the design is created through the use of space.

Whitespace or space in general mainly accomplishes three purposes in a design. It creates groupings of elements, creates emphasis and hierarchy and it also improves legibility of the texts. It is also important that the space in some elements remains the same in order not to confuse the final users who navigate the website. For example, the navigation bar stays in the same location. Another example can be the logo to be in the same spot on every page. As long as these important navigation elements remain consistent, the appearance of the website looks to be the same. Sections within the website can maintain consistent space within the section and differ from other sections. Hence, whitespace makes the page and the website easier to navigate.

For a professional design, consistent use of negative space is a trademark. Negative space is the space around and between the object or the content. If there is little thought given to the space within the design, it becomes amateurish. Negative space can be passive or active depending on how it is used; when it is asymmetrically balanced it becomes active. Hence it makes the website dynamic, modern and certainly more interesting.

When the white space is arranged well, the elements fall into place and the design looks great. However, if there is too much concentration only on the positive elements in the website the white space will become inactive. The reason for that is whitespace gives a place for the eye to rest. This is needed in order for the eye to absorb the message that is tried to communicate with the end user.

#### *- Color*

It always difficult to decide what color scheme to use. It is only possible to see how well the colors have worked at the end of the web design process. Colors used in the website have an effect on the end user browsing the website. Color contrast and color vibrancy attracts the visitor to the website. Contrast reduces eyestrain and claims user attention. Vibrancy dictates the emotion, darker shades relax the user and brighter color excites the user.

Choosing colors that are on the opposite ends of the color spectrum creates a visual harmony for the eyes. This high contrast between elements of the website makes the text easily readable which takes the readers attention. The brighter the colors, the more mental energy they will consume.

There are various software that can be used that will help to make proper color choices for the website. For example Kuler is a very useful software that can be used.

“A tool developed by Adobe, Kuler is aimed at providing an intuitive way to create a color palette. Every color on the palette can be individually modified, or chosen as the base color, with a few simple clicks. Palettes can be saved and published, and there is a number of great community entries available on their site. Under each color, the export codes are provided (including hexadecimal). However, the interface can be cumbersome at times; adjusting the vibrancy of a specific color can alter the entire palette”. (Tuts+, 2012)

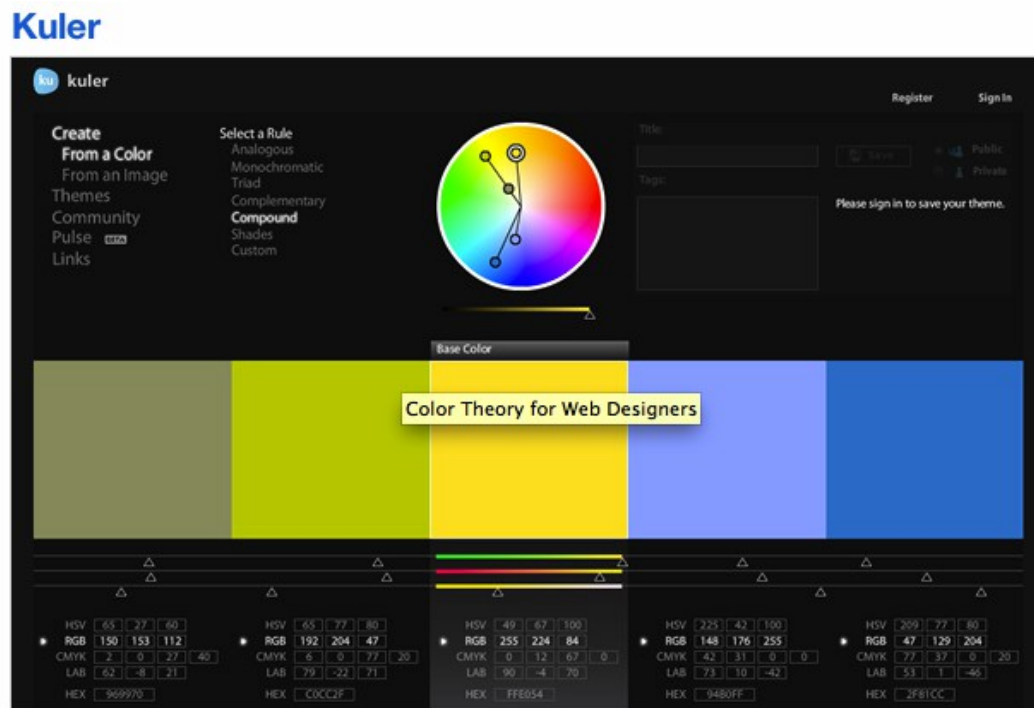


Figure 15. Adobe Kuler (Kuler, 2014)

## 3 IMPLEMENTATION

### 3.1 Designing the website

Out of the various ideas during the research, there were two ideas considered as the major ones to be implemented in the website. Making the website responsive to different devices and having a minimalist design is the aim during the development process. Keeping these ideas in mind, the sketching of the website was carried out.

### 3.2 Sketching of the website.

The use of grid system while making a webpage is one of the main traits of both minimal web design as well as responsive web design. The 960 grid system is one of the most famous grid frameworks used by developers and designers to make a website look more professional. Hence, the same grid system was used as a reference while making a sketch of the website.

Below is the figure of the 12-grid framework of the 960 grid system used while sketching the website in Adobe Photoshop. The framework package was downloaded on GPL license.

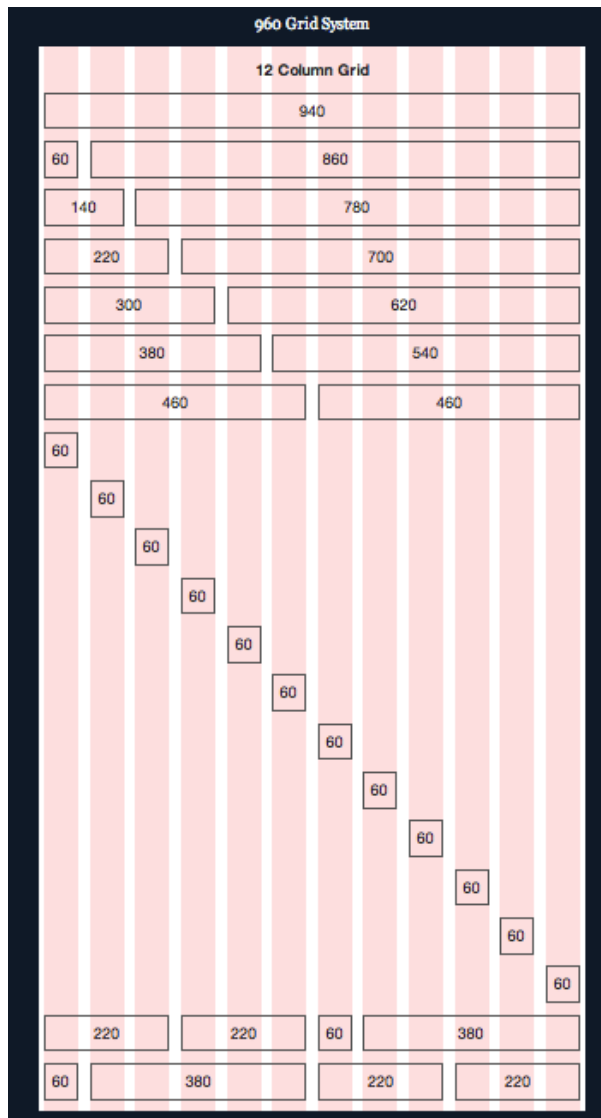


Figure 16. 960 grid system

### 3.3 Mobile First Principle

While making a responsive website, different screen sizes need to be taken into account. Working properly in mobile devices is a primary idea of responsive design. The idea of mobile first principle is to design and develop the website in mobile devices first and then implement the same structure in the larger screens. This idea is contrary to the traditional way of developing websites. In the past making a website for the desktop environment was taken as a primary target and the mobile version were developed only if it was necessary. As shown in the research of this thesis, the market



of mobile web users is going through a rapid growth. So first of all, the mobile version of the website was sketched.

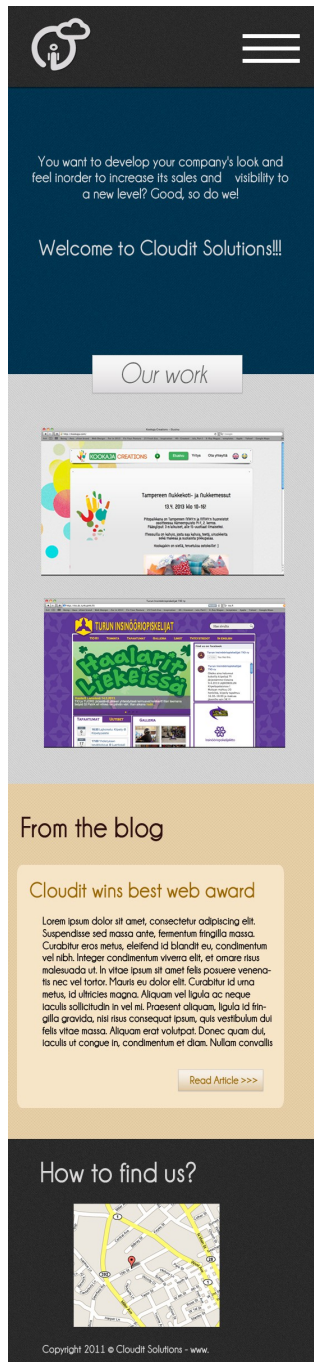


Figure 17. Mobile version of the website

### 3.4 The website

Based on the mobile version sketched, the full version of the website was also designed. By using the CSS3 media query, the website is responsive to different screens. The only major change in the two designs was making the navigation bar hidden in the mobile website into a pop-up button. In addition, the amount of content shown in the mobile version is slightly reduced.

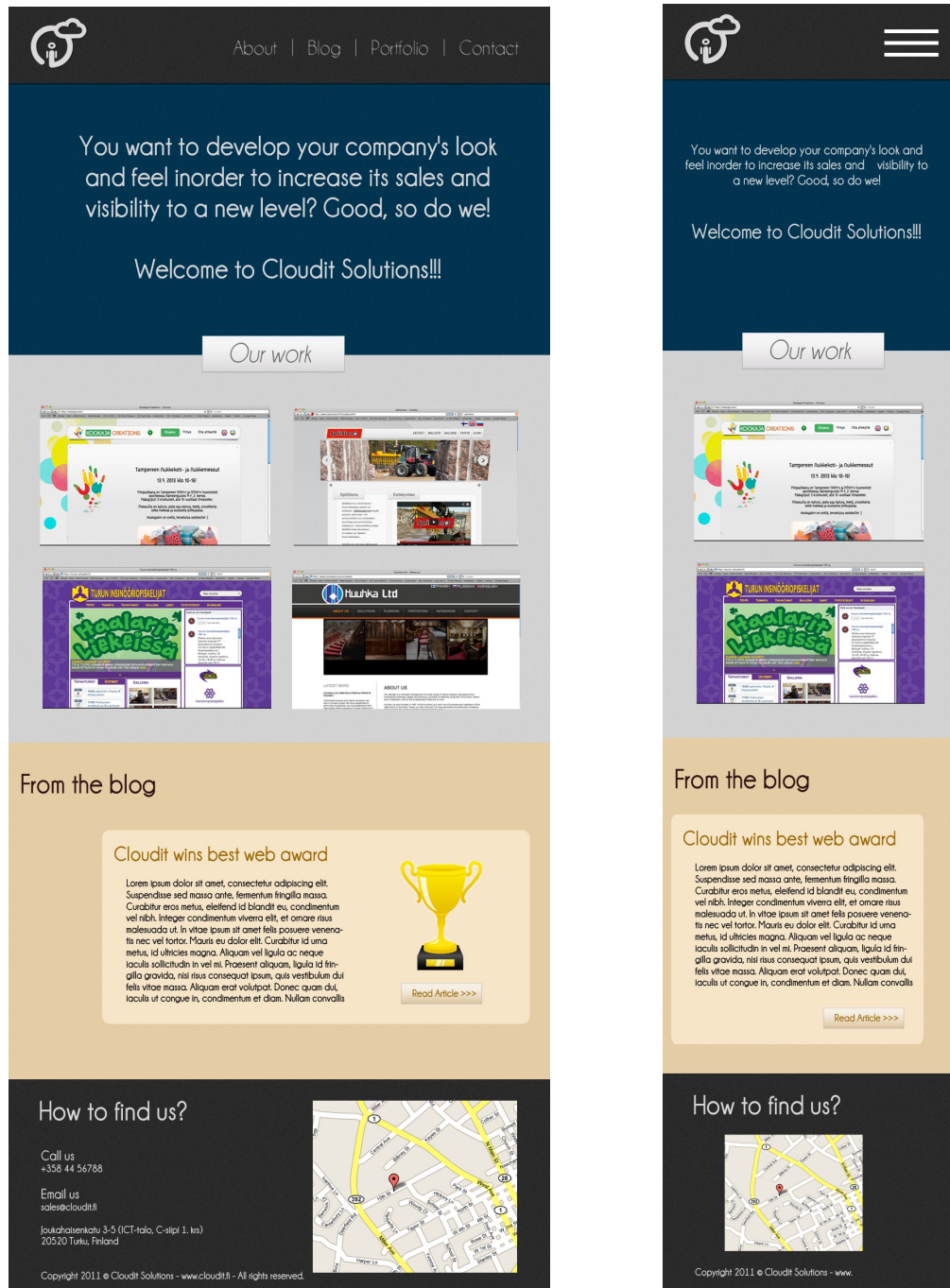


Figure 18. Main site vs mobile site

There are four vertical parts in the front page of the website. When first loading the website, only the first part of four parts of the website is seen. On the first part, there is just a slogan representing the company. Following the minimal web design technique, there is nothing more than the logo, navigation bar and the slogan. When the end user first accesses the website, the first screen that the end user will see is the one in Figure 19. It directly gives the information about the company's vision. Scrolling down further will make the other parts of the website come into the screen.

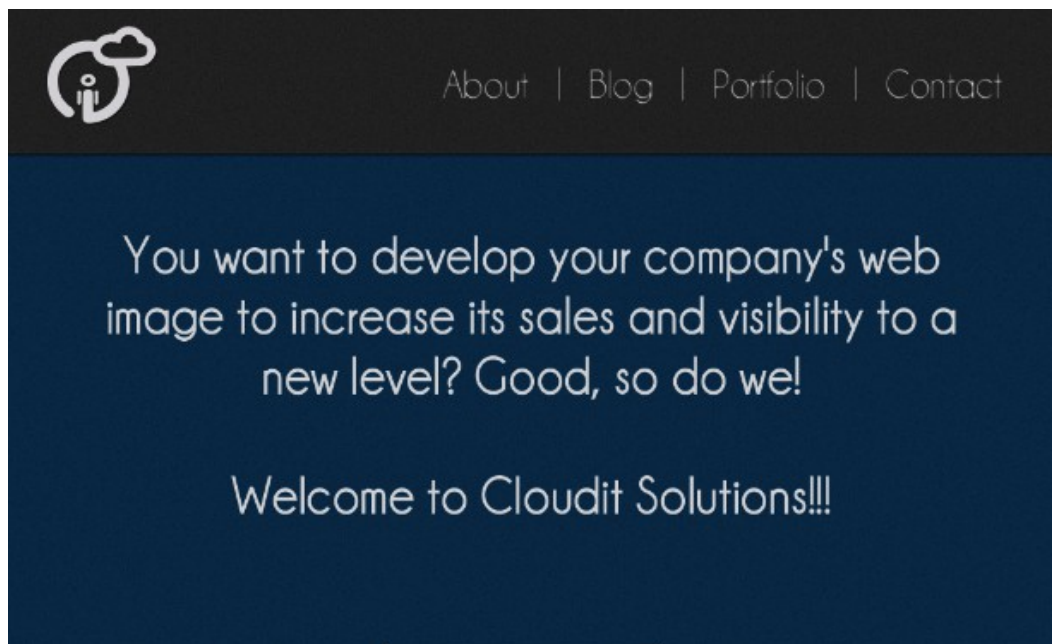


Figure 19. First part of the front page

All the important contents that the company wants to show it to its end user is already on the front page. The more detailed and not so necessary contents are within the links of the website. The second part of the front page contains just a couple of pieces of work carried out by the company but not the whole portfolio. When the end user clicks on the contents, they are redirected to the actual portfolio page where all the contents are.



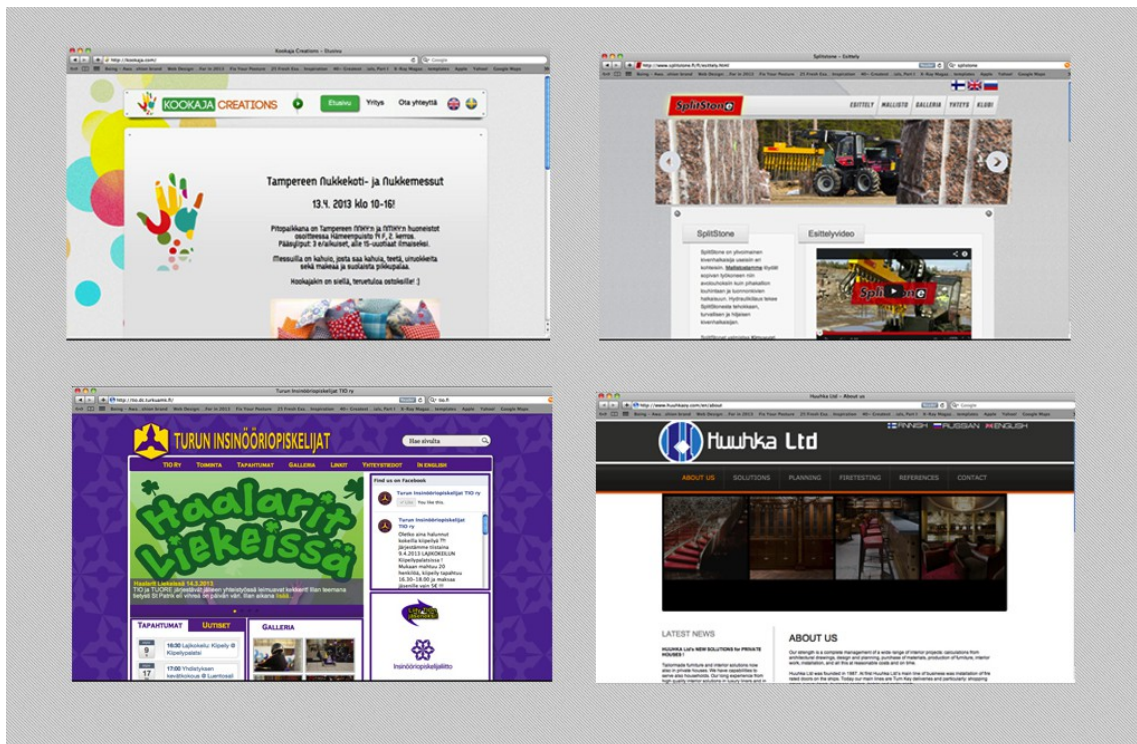


Figure 20. Second part of the front page

The latest blog events are the next part of the front page. Finally, the last part is the contact address and a Google Maps link of the company. The reason for having the contact address in the front page is to give a welcoming feeling to the end user.

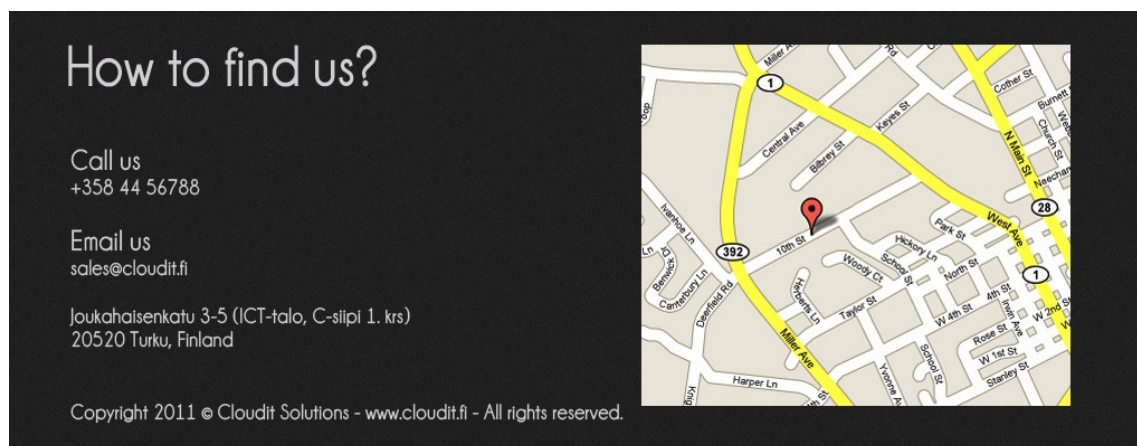


Figure 21. Last part of the front page

### 3.5 Implementation of minimal web design

The website does not contain any unnecessary elements, only the important contents are shown. The use of typography is maximum; it is used to get the attention of the end users who can be potential customers. The website uses contrasting colors and the colors used are much calmer for the eye of the end user. This gives a calmer feeling to go through the website. The 960 grid system is used as a reference to give s a professional look to the website. Hence, all the elements to make a minimalist web site were taken into consideration while designing the website.

## 4 CONCLUSION

The way a website is designed and developed is changing day by day. New trends, new platforms and new ideas are put forward almost on a weekly basis now-a-days. As it is expected that by 2017 the amount of mobile internet users is going to reach 3 billion, there is a need to move everything to a mobile-friendly platform. Since web browsing is the basis for internet use, it is vital that the responsive web design needs to be introduced in all web sites. The major advantage of having responsive web design is that a single set of codes is applied to all devices browsing the website. This makes it easier to make changes to the website and also makes it easier to make updates if necessary.

Surveys and various research data suggests that customers are more likely to buy their product if the website is accessible on the go and it is easily browsed through. This makes responsive web design and minimal web design a very essential element to have for marketing their business.

The website needs to take care of its audience. The idea of minimal web design is to have as less unnecessary content as possible. This gives the end user a calmer feeling while browsing. Moreover, by having all the content the end user wants to see easily discoverable, the end user can turn out to be a potential customer. Making a website minimal is intimidating for web developers and it is quite difficult to master. Although it is difficult, the end result of having a minimal website has many benefits.

The use of minimalism in the website and making it responsive to all the devices capable of browsing the web is the future of web development.

## REFERENCES

960 Grid System (2009). 12 column grid system: <https://github.com/nathansmith/960-Grid-System/archive/master.zip> [Accessed: November 2014]

Adobe Kuler (2014). Color wheel: <https://color.adobe.com/create/color-wheel/> [Accessed: December 2014]

Bradly, S (2013). *Introducing "Design Fundamentals: Elements, Attributes, & Principles"* . Boulder, Colorado: Vanseo Design

Cederholm, D (2010). *CSS3 for Web designers*. New York, New York: A Book Apart

Emarketer (2014). *Smartphone users worldwide will total 1.75 Billion in 2014* : <http://www.emarketer.com/Article/Smartphone-Users-Worldwide-Will-Total-175-Billion-2014/1010536> [Accessed: January 2015]

Google Mobile Ads (2012). *Mobile-friendly sites turn visitors into customers*: <http://googlemobileads.blogspot.fi/2012/09/mobile-friendly-sites-turn-visitors.html> [Accessed: December 2014]

Keith, J (2010). *HTML5 for Web designers*. New York, New York: A Book Apart

Marcotte, E. (2011). *Responsive Web Design*. New York, New York: A Book Apart

Schenker, M (2014). *Perfecting minimalism in web design*: <http://www.webdesignerdepot.com/2014/06/6-steps-to-perfecting-minimalism-in-web-design/> [Accessed: January 2015]

Tuts+ (2012). *An introduction for color theory*: <https://webdesign.tutsplus.com/articles/an-introduction-to-color-theory-for-web-designers--webdesign-1437> [Accessed: November 2014]

Vasinov, V (2010). *Topography is important*: Techmic studios: <http://www.techmic.com/magazine/issue-1/typography-is-important> [Accessed: Januar 2015]

Wroblewski, L (2011). *Mobile First*. New York, New York: A Book Apart